IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Jerry Chow	§	Art Unit:	2432	
		§			
Serial No.:	10/813,003	§	Confirmation No.:	5213	
		§			
Filed:	March 31, 2004	§	Examiner:	Jung W. Kim	
		§			
For:	Memory Protection	§	Atty. Dkt. No.:	NRT.0199US	
	Systems and Methods for	§		(15923ROUS04U)	
	Writable Memory	§			

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<u>PRE-APPEAL BRIEF REQUEST FOR REVIEW</u>

Applicant requests review of the final rejection in the above-identified application. This request is being filed with a Notice of Appeal.

<u>Independent Claim 22</u>

Independent claim 22 was rejected as purportedly obvious over Bryant in view of Bishop, or alternatively, over Hind in view of Bryant and Bishop.

As conceded by the Office Action, Bryant fails to disclose rendering the memory protection key in the memory write command inaccessible by overwriting at least a portion of the memory protection key upon completion of the memory write command. 5/20/2000 Office Action at 6. Instead, the Office Action cited Bishop as purportedly disclosing the claimed feature missing from Bryant. *Id.* at 5.

It is respectfully submitted that a person of ordinary skill in the art would not have been prompted to combine the teachings of Bryant and Bishop. As taught by Bryant, a user program stores a token in a register location. Bryant 19:41-42. Subsequently, when the user program issues an instruction to modify the information currently stored in a previously protected page, the user program issues a special instruction that retrieves the token from the register and provides the token to the hardware. *Id.* 19:43-50. The token that is provided by the user program (retrieved from the register) is compared to a token assigned to a protected page frame, and if the tokens match, the hardware permits the user program to update the protected memory location. *Id.* 19:59-67.

As specifically taught by Bryant, the user program stores the token in the register **for future use**, i.e., for subsequent retrieval when using one of the special instructions. *Id.*, 17:35-37. As further taught by Bryant, "other programs can be authorized to store to the protected page if they are provided with the location of the register storing the token." *Id.* 17:37-40. Thus, Bryant actually would have led a person of ordinary skill in the art away from the claimed invention, which recites that the memory protection key in the memory write command that has been written to the volatile memory is rendered **inaccessible** by overwriting at least a portion of the memory protection key in the volatile memory upon completion of the memory write command to make the memory protection key in the volatile memory **inaccessible after completion of the memory write command**.

The Response to Arguments section of the Office Action further cited column 5, line 56 – column 6, line 6, of Bryant, as purportedly supporting the rejection. Specifically, the Office Action referred to the discussion in Bryant that a user program issues a special instruction that retrieves the **previously stored token from its register**. 5/20/2009 Office Action at 3. According to the Office Action, Bryant "inherently requires storing the token to a volatile memory separate from the aforementioned register for the verification process." *Id.* Retrieving the token from the register to volatile memory does not change the fact the Bryant still teaches the storage of a token in a register for future use, in contradiction of the subject matter of claim 22, which recites rendering the memory protection key in the memory write command that has been written to the volatile memory inaccessible by overriding at least a portion of the memory protection key in the volatile memory upon completion of the memory write command to make the memory protection key in the volatile memory inaccessible after completion of the memory write command. In Bryant, persistent storage of the token is provided such that the goal of rendering the token inaccessible as recited in claim 22 cannot be achieved.

Thus, the teachings of Bryant relating to token storage for **future** use would have led a person of ordinary skill in the art away from the claimed invention, and away from using the techniques mentioned in Bishop regarding erasing, deleting, or deallocating sensitive information. Stated differently, if the techniques of Bishop were to be applied to the teachings of Bryant, then Bryant would have been rendered inoperable for its intended purpose, which is to allow the token in the register to be accessible for future memory operations or even for use by other programs. The objective evidence of record thus establishes that a person of ordinary skill

in the art would have found no reason to combine the teachings of Bryant and Bishop to achieve the claimed invention. Therefore, claim 22 is non-obvious over Bryant and Bishop.

Independent claim 22 was alternatively rejected as obvious over Hind, Bryant, and Bishop. In the rejection of claim 22, the Office Action cited Hind as purportedly disclosing "a method to remotely update software via update rules contained in the update; receiving the update comprises receiving, via a wireless receiver." 5/20/2009 Office Action at 17. It is noted that claim 22 does not recite the subject matter that was paraphrased on page 15 of the Office Action in the rejection of claim 22. In any event, it appears that the Office Action has conceded that Hind fails to disclose the remaining elements of claim 22. The Office Action cited Bryant and Bishop as purportedly disclosing the vast majority of the elements of claim 22. *Id.* at 16.

As discussed above, it is clear that Bryant provides absolutely no hint whatsoever of rendering the memory protection key in the memory write command that has been written to the volatile memory inaccessible by overwriting at least a portion of the memory protection key in the volatile memory upon completion of the memory write command to make the memory protection key in the volatile memory inaccessible after completion of the memory write command. In fact, Bryant would have led away from the claimed subject matter and from a combination with Bishop.

Therefore, a person of ordinary skill in the art clearly would not have been prompted to combine the teachings of Hind, Bryant, and Bishop to achieve the claimed invention. As noted above, if the techniques of Bishop were to be applied to the teachings of Bryant, then Bryant would be rendered inoperable for its intended purpose, which is strongly indicative of the fact that a person of ordinary skill in the art would not have been prompted to combine the teachings of the references to achieve the claimed invention. Therefore, claim 22 is also non-obvious over Hind and Bryant.

Independent Claims 16 and 36

Independent claim 16 was rejected as purportedly obvious over Hind, Bryant, and Bishop. With respect to claim 16, the Office Action stated that "Hind discloses an electronic device comprising a memory; a wireless receiver configured to receive data relating to a remote software update to be written to the memory, and means to securely update the software files via update rules." 5/20/2009 Office Action at 14-15. It is noted that claim 16 does not recite "means

to securely update the software files via update rules." In any event, it appears that the Office Action has conceded that Hind fails to disclose all remaining elements of claim 16, including the "memory protection system" element and the "volatile storage" element of claim 16. Instead, the Office Action cited Bryant as purportedly disclosing these claimed features that were conceded to be missing from Hind. *Id.* at 13.

The "volatile storage" clause of claim 16 recites:

> volatile storage having unprotected memory locations, the memory protection system configured to download the received data including the key to the unprotected memory locations of the volatile storage prior to writing the received data to the protected memory locations, and the memory protection system to render the key inaccessible by overwriting at least a portion of the key.

As discussed above, Bryant would have led a person of ordinary skill away from this claimed subject matter, since Bryant contemplates that the token contained in its register is made accessible for **future use** by the user program or by other programs. Bryant, 17:35-40. Thus, a person of ordinary skill in the art would have been led away from making the combination of Hind, Bryant, and Bishop to achieve the subject matter of claim 16. In fact, if the teachings of Bishop were to be incorporated into Bryant, then Bryant inoperable for its intended purpose.

In view of the foregoing, it is respectfully submitted that the obviousness rejection of claim 16 is defective. Independent claim 36 is also similarly allowable over Hind, Bryant, and Bishop.

Independent Claim 1

Independent claim 1 was rejected as purportedly obvious over Bryant in view of Bishop, or Beukema in view of Bishop, or England in view of Bishop.

As discussed above, no reason existed that would have prompted a person of ordinary skill in the art to combine the teachings of Bryant and Bishop. Therefore, the obviousness rejection of claim 1 over Bryant and Bishop is clearly defective.

The obviousness rejection of claim 1 over Beukema and Bishop is also defective. Beukema describes accessing a protection/translation table to retrieve a protection key, and to compare the protection key to a protection key received in an access to main memory. Beukema, ¶ [0054]. However, there is no hint in Beukema of any desirability to render this protection key

inaccessible by overwriting at least a portion of such protection key. Therefore, a person of ordinary skill in the art would not have been prompted to combine the teachings of Beukema and Bishop to achieve the claimed subject matter.

In fact, this point is reinforced by the teachings of Bryant, which constitutes objective evidence that a person of ordinary skill in the art would have been led away from the claimed invention. Therefore, claim 1 is also non-obvious over Beukema and Bishop is also defective.

The obviousness rejection of independent claim 1 over England and Bishop is also defective. England refers to an application passing a rights manager certificate and application storage key to a digital rights management operating system (DRMOS). The DRMOS validates the key and compares the rights manager certificate against an access predicate. The DRMOS also determines if the application's use of the content is permitted under the license and allows access if it is. England, 10:41-51. However, England does not disclose or hint at rendering a memory protection key inaccessible by overwriting at least a portion of the memory protection key. In fact, there is nothing in England to hint at any desirability of incorporating such a feature. Therefore, a person of ordinary skill in the art would not have been prompted to incorporate the teachings of Bishop in England to achieve the claimed subject matter.

Again, the teachings of Bryant constitute objective evidence that a person of ordinary skill in the art would have been led away from the invention. Therefore, claim 1 is also non-obvious over England and Bishop.

CONCLUSION

Dependent claims are allowable for at least the same reasons as corresponding independent claims. In view of the allowability of base claims, it is respectfully submitted that the obviousness rejections of dependent claims have been overcome.

Allowance of all claims is respectfully requested. The Commissioner is authorized to charge any additional fees and/or credit any overpayment to Deposit Account No. 14-1315 (15923ROUS04U).

Respectfully submitted,

Date: <u>August 20, 2009</u>   _____/Dan C. Hu/_____
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